IN THE CLAIMS

Please amend the claims as follows:

1. (Original) A beam shaping method based on broadband antenna, comprising:

measuring the frequency of input signals of the antenna;

determining the effective antenna aperture between the elements of the antenna array according to the measured frequency;

computing the weight vector of each element of the antenna array to the signals according to the determined effective antenna aperture and the transmission function of the antenna array;

multiplying the input signals with said weight vector of each element of the antenna array to the signals, combining them and outputting the beam signals.

2. (Original) The beam shaping method based on broadband antenna according to claim 1, wherein said step of multiplying the input signals with the corresponding weight vectors further includes:

performing a series of delaying operations on the input signals;

multiplying each delayed signal with the corresponding weight vector, and combining each delayed weighted signal.

3. (Original) The beam shaping method based on broadband antenna according to claim 1, further comprising:

performing FFT (Fast Fourier Transform) first so as to transform input signals into signals in frequency domain before measuring the frequency of input signals,

performing IFFT (Inverse Fast Fourier Transform) so as to transform the combined signals in frequency domain into signals in time domain after combining the signals weighted by each element of the antenna array.

4. (Currently amended) The beam shaping method based on broadband antenna according to claim 1, ~~2 or 3,~~ wherein said effective antenna aperture between elements is $d = \lambda/2$, wherein λ is the wavelength of said input signals.

5. (Currently amended) The beam shaping method based on broadband antenna according to claim 1, ~~2, 3 or 4,~~ is performed by at least one of the base station and the mobile terminal.

6. (Original) A beam shaping apparatus based on broadband antenna, comprising:

an effective antenna aperture computing module, for measuring the frequency of input signals of the antenna, and then determining the effective antenna aperture between elements of the antenna array according to the measured frequency;

a weight vector computing module, for computing the weight vector of each element of the antenna array to said input signals according to the determined effective antenna aperture and the transmission function of the antenna array;

a beam generating module, for multiplying said input signals with said weight vector of each element of the antenna array to said input signals, and then combining them and outputting the beam signals.

7. (Original) The beam shaping apparatus based on broadband antenna according to claim 6, wherein said beam generating module further includes:

a plurality of groups of delayers, each group for performing a series of delaying operations on the input signals;

a plurality of groups of weight vector adjusting modules, each group for multiplying each delayed signal with said corresponding weight vector;

a beam combining module, for combining the weighted signals, and outputting the combined signals.

8. (Original) The beam shaping apparatus based on broadband antenna according to claim 6, further comprising:

a time/frequency transforming module, for performing FFT (Fast Fourier Transform) to the input signals of the antenna, so as to

provide the transformed signals in frequency domain to said effective antenna aperture computing module;

a frequency/time transforming module, for performing IFFT (Inverse Fast Fourier Transform) to the beam signals in frequency domain outputted from said beam generating module, to acquire the beam signals in time domain;

9. (Currently amended) The beam shaping equipment based on broadband antenna according to claim 6, ~~7 or 8,~~ wherein said effective antenna aperture between elements of the antenna array is $d = \lambda/2$, where λ is the wavelength of said input signals.

10. (Original) A base station system, comprising:

a radio signal transceiving module, for receiving or transmitting radio signals;

an effective antenna aperture computing module, for measuring the frequency of input signals of the antenna of the base station, and then determining the effective antenna aperture between elements of the antenna array of the base station according to the measured frequency.

a weight vector computing module, for computing the weight vector of each element of the antenna array of the base station to said input signals according to the determined effective antenna aperture and the transmission function of the antenna array;

a beam generating module, for multiplying said input signals with the weight vector of each element of the antenna array of the base station to said input signals, then combining them and outputting the beam signals.

11. (Original) The base station system according to claim 10, wherein said beam generating module further includes:

a plurality of groups of delayers, each group for performing a series of delaying operations on the input signals;

a plurality of groups of weight adjusting modules, each group for multiplying each delayed signal with said corresponding weight vector;

a beam combining module, for combining said weighted signals and outputting the combined signals;

12. (Original) The base station system according to claim 10, further comprising:

a time/frequency transforming module, for performing FFT (Fast Fourier Transform) to input signals of the antenna of the base station, so as to provide signals in frequency domain to said effective antenna aperture computing module;

a frequency/time transforming module, for performing IFFT (Inverse Fast Fourier Transform) to the beam signals in frequency domain combined and outputted from said beam generating module, so

as to acquire the beam signals in time domain;

13. (Currently amended) The base station system according to claim 10, ~~11 or 12,~~ wherein said effective antenna aperture between elements of antenna array is $d = \lambda/2$, where λ is the wavelength of said input signals.

14. (Original) A mobile terminal, comprising:

a radio signal transceiving module, for receiving or transmitting radio signals;

an effective antenna aperture computing module, for measuring the frequency of input signals of the antenna of the mobile terminal, and then determining the effective antenna aperture between elements of the antenna array of the mobile terminal according to the measured frequency;

a weight vector computing module, for computing the weight vector of each element of the mobile terminal to said input signals according to the determined effective antenna aperture and the transmission function of the antenna array;

a beam generating module, for multiplying said input signals with the weight vector of each element of the mobile terminal to said input signals, then combining them and outputting the beam signals.

15. (Original) The mobile terminal according to claim 14, wherein said beam generating module further includes:

a plurality of groups of delayers, each for performing a series of delaying operations on the input signals;

a plurality of groups weight adjusting modules, each group for multiplying each delayed signal with said corresponding weight vector;

a beam combining module, for combining said weighted signals and outputting the combined signals.

16. (Original) The mobile terminal according to claim 14, further comprising:

a time/frequency transforming module, for performing FFT (Fast Fourier Transform) to the input signals of the antenna of said mobile terminal, so as to provide the transformed signals in frequency domain to said effective antenna aperture computing module;

a frequency/time transforming module, for performing IFFT (Inverse Fast Fourier Transform) to the beam signals in frequency domain combined and outputted from said beam generating module, so as to acquire beam signals in time domain;

17. (Currently amended) The mobile terminal according to claim 14, ~~15 or 16,~~ wherein said effective antenna aperture between elements of the antenna array is $d = \lambda/2$, where λ is the wavelength of said input signals.